

NTHRYS

OPC PVT LTD

SECTION • EDT

Genome Editing & Engineering

Hands-on wet-lab training in precise genome modification —
CRISPR-Cas editing, base and prime editing, programmable TALEN
/ ZFN nucleases, CRISPR screening, delivery and editing-outcome
analysis, and engineered cell-line and strain generation.

06

CATEGORIES

30

PROTOCOLS

EDT

SECTION ID

2026

EDITION

Categories & Protocols

Section **EDT** spans 6 category streams and 30 bench protocols. Every protocol carries a unique code for enrolment, tracking and certification.

EDT-CR	CRISPR-Cas Editing gRNA design, RNP delivery, knockout & knock-in	05
EDT-BP	Base & Prime Editing Cytosine/adenine base editing & prime editing	05
EDT-NU	Programmable Nucleases (TALEN / ZFN) TALEN, zinc-finger & meganuclease engineering	05
EDT-SC	CRISPR Screening Pooled / arrayed libraries, CRISPRi/a & hit calling	05
EDT-DA	Delivery & Editing-Outcome Analysis Delivery routes, indel detection & off-target assays	05
EDT-CE	Cell-Line & Strain Engineering Clone isolation, genotyping & edited-line validation	05
TOTAL	All training protocols in section EDT	30

CODE FORMAT

EDT • **CR** • **01**

EDT section

CR category

01 protocol

01

■ CATEGORY · EDT-CR

CRISPR-Cas Editing

gRNA design, RNP delivery, knockout & knock-in

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

EDT-CR-01

gRNA Design & Selection

Target & off-target-aware design.

EDT-CR-02

Cas9 RNP Assembly &
Delivery

Ribonucleoprotein editing.

EDT-CR-03

Knockout Generation
(NHEJ)

Indel-based gene disruption.

EDT-CR-04

Knock-In via HDR

Templated precise insertion.

EDT-CR-05

Editing Efficiency
Assessment

Quantifying edit rates.

02

CATEGORY • EDT-BP

Base & Prime Editing

Cytosine/adenine base editing & prime editing

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

EDT-BP-01

Cytosine Base Editing

C→T precise conversion.

EDT-BP-02

Adenine Base Editing

A→G precise conversion.

EDT-BP-03

Prime Editing (pegRNA Design)

Search-and-replace editing.

EDT-BP-04

Editing Window Optimisation

Targeting the right base.

EDT-BP-05

Off-Target Minimisation

Specificity-enhancing design.



■ CATEGORY • EDT-NU

Programmable Nucleases (TALEN / ZFN)

TALEN, zinc-finger & meganuclease engineering



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

EDT-NU-01

TALEN Design & Assembly

Modular DNA-binding arrays.

EDT-NU-02

Zinc-Finger Nuclease Design

Finger-module targeting.

EDT-NU-03

Meganuclease Engineering

Homing-endonuclease retargeting.

EDT-NU-04

Nuclease Activity Validation

Cleavage-efficiency testing.

EDT-NU-05

**Comparative Nuclease
Selection**

Choosing the right platform.

04

■ CATEGORY · EDT-SC

CRISPR Screening

Pooled / arrayed libraries, CRISPRi/a & hit calling

05

PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

EDT-SC-01

Pooled CRISPR Library Design

Genome-scale sgRNA libraries.

EDT-SC-02

Arrayed Screening

Well-by-well perturbation.

EDT-SC-03

CRISPRi / CRISPRa Screens

Repression / activation screens.

EDT-SC-04

Library Transduction & Selection

Coverage & representation.

EDT-SC-05

Screen Readout & Hit Calling

Enrichment / depletion analysis.



■ CATEGORY · EDT-DA

Delivery & Editing-Outcome Analysis

Delivery routes, indel detection & off-target assays



CODE	TRAINING PROTOCOL	DESCRIPTION
EDT-DA-01	RNP / Plasmid / Viral Delivery	Editor-delivery selection.
EDT-DA-02	Editing-Outcome Amplicon Sequencing	Precise outcome readout.
EDT-DA-03	T7E1 / Surveyor Assay	Mismatch-cleavage detection.
EDT-DA-04	Off-Target Detection (GUIDE-seq)	Genome-wide off-target mapping.
EDT-DA-05	Indel & Allele Quantification	Edit-spectrum deconvolution.



■ CATEGORY · EDT-CE

Cell-Line & Strain Engineering

Clone isolation, genotyping & edited-line validation



PROTOCOLS

CODE

TRAINING PROTOCOL

DESCRIPTION

EDT-CE-01

Single-Cell Clone Isolation

Limiting-dilution / sorting.

EDT-CE-02

Edited-Clone Genotyping

Allele confirmation.

EDT-CE-03

Knockout / Knock-In
Validation

Functional & molecular checks.

EDT-CE-04

Conditional / Inducible
Editing

Controllable edit systems.

EDT-CE-05

Engineered Strain Banking

Stable edited-line storage.

Edit the genome with precision

Every protocol in Section EDT is delivered as hands-on bench training — from gRNA design and Cas9 delivery through base / prime editing, CRISPR screening and edited-clone validation. Modern editing turns the genome from something you read into something you rewrite.

30 protocols

6 categories

EDT section

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